



Accelerated efforts at INL and the National Nuclear Security Administration have helped convert five U.S. research and test reactors in the past two years so they use low enriched uranium fuel

NNSA, INL, Washington & Oregon state universities complete research reactor conversions

from NNSA and Washington State University news releases

This week, the U.S. National Nuclear Security Administration (NNSA) successfully converted research reactors at Washington State University and Oregon State University from highly enriched uranium (HEU) to low enriched uranium (LEU). As part of its nuclear nonproliferation mission, NNSA provides support to convert research reactors in the U.S. and around the world that operate on HEU fuel to LEU fuel. In the U.S., NNSA converted the research reactor at Purdue University in September 2007 and the research reactors at Texas A&M and the University of Florida in September 2006.

The Department of Energy's Idaho National Laboratory has the lead role in managing the conversions in the United States. The laboratory is responsible for the overall coordination of the conversion activities, including the purchasing of the new LEU fuel. Project managers from INL coordinate all of the conversion activities, including the conversion analyses, the LEU fuel fabrication, core loading and restart of the reactor. The conversion of each of these reactors is under an aggressive two-year schedule involving a multidisciplinary team consisting of reactor analysts, fuel fabricators, engineers, the licensees, professors, university students, transportation personnel, contractors and various government agencies.

"It has been gratifying to serve in the important role of leading the team responsible for conversions in support of the Global Threat Reduction Initiative's Convert Program," said Eric Woolstenhulme, INL project manager for the WSU conversion. "This conversion contributes to the overall objective of reducing the usage of HEU in research reactors around the world; working together, we are making the world a safer place to live."

Also this week, another HEU research reactor began decommissioning through support provided by NNSA. The Zero Power Physics Reactor (ZPPR) at INL was shut down, and the decommissioning of ZPPR will allow for the removal of several tons of HEU from the facility. With previous domestic and international conversions, NNSA has now converted or verified the shutdown of a cumulative total of 59 HEU research reactors.

The TRIGA-type HEU research reactors at WSU and OSU were converted as part of the 2005 North American Security and Prosperity Partnership between the U.S., Mexico and Canada. The partners agreed to convert civilian HEU-fueled reactors in North America to LEU fuel by 2011, as LEU fuel becomes available. The U.S. has completed the conversion of five of its six reactors under this agreement.

The WSU reactor has been operated with HEU fuel since it was first obtained as part of the Fuel Life Improvement Program (FLIP) in 1976. The FLIP fuel was designed to operate for very long periods of time.

"Our FLIP fuel is 32 years old and would probably last another 20 to 30 years, but was replaced as required by federal law," said Donald Wall, director of the WSU Nuclear Radiation Center.

The WSU Nuclear Radiation Center serves as a university research resource and conducts a program in which WSU students can learn to operate the WSU nuclear reactor and become licensed by the U.S. Nuclear Regulatory Commission as a Nuclear Reactor Operators.

The two conversions and one decommissioning come as experts prepare to meet Oct. 5-9 in Washington, D.C. for the 30th anniversary International Meeting on Reduced Enrichment for Research and Test Reactors (RERTR). Additional information on the 30th Annual RERTR meeting can be found [here](#).

NNSA is a separately organized agency within the U.S. Department of Energy responsible for enhancing national security through the military application of nuclear science. NNSA maintains and enhances the safety, security, reliability and performance of the U.S. nuclear weapons stockpile without nuclear testing; works to reduce global danger from weapons of mass destruction; provides the U.S. Navy with safe and effective nuclear propulsion; and responds to nuclear and radiological emergencies in the U.S. and abroad.

Visit www.nnsa.energy.gov or the [WSU NRC Web site](#) for more information.

